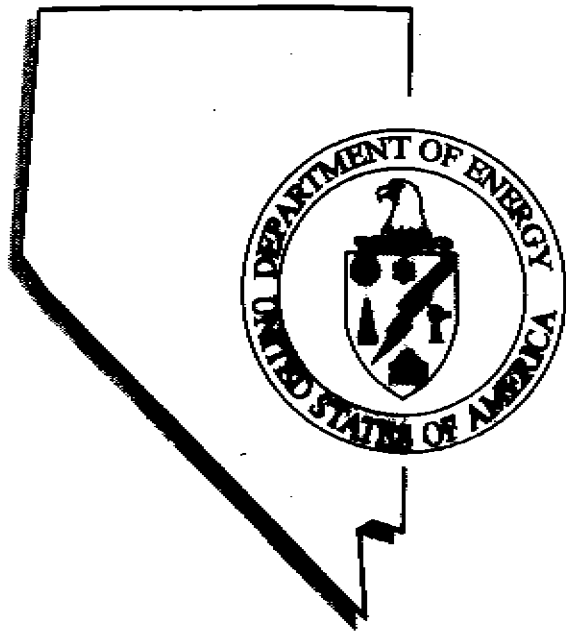


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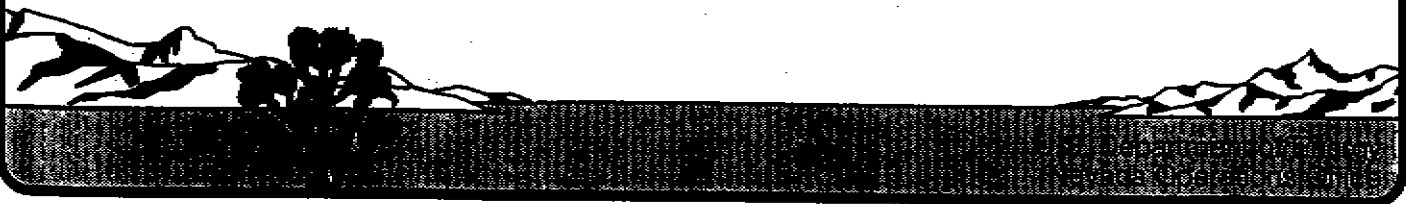


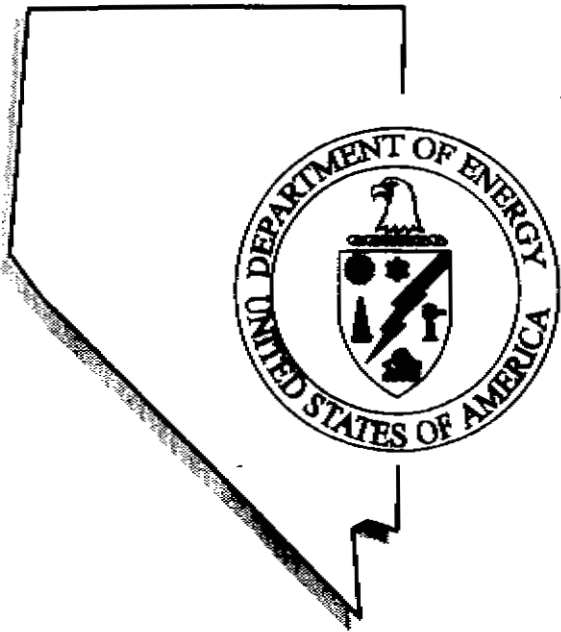
**A Class III Cultural Resources Survey
of the U. S. Department of Energy
Rulison Gas Stimulation Test Site
Garfield County,
Colorado**

December 1993

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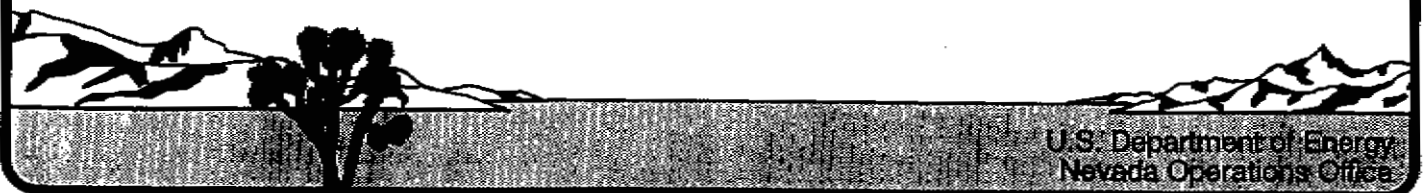




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Environmental Restoration



U.S. Department of Energy
Nevada Operations Office

**A Class III Cultural Resources Survey of the
U.S. Department of Energy
Rulison Gas Stimulation Test Site
Garfield County, Colorado**

Prepared for:
DOE Nevada Operations Office
Las Vegas, Nevada 89193-8518

Prepared by:
IT Corporation
4330 S. Valley View Blvd.
Las Vegas, Nevada 89103

Work Performed under Contract No.:
DE-AC08-92NV10972

December 1993

**A Class III Cultural Resources Survey of the
U.S. Department of Energy
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Garfield County, Colorado**

Prepared Under Contract for:
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Author/Principal Investigator:
Lucy Hackett Bambrey
IT Corporation

Colorado Permit No. 93-48

Bureau of Land Management
Cultural Use Permit No. C54964

Work Performed under Contract No.:
DE-AC08-92NV10972

December 1993

Abstract

This report documents the findings of a cultural resources survey conducted for the U.S. Department of Energy (DOE) by IT Corporation (IT). The purpose of the project was to comply with Section 106 of the National Historic Preservation Act, as implemented by the Advisory Council on Historic Preservation Regulations, Title 36 C.F.R. §800, prior to performing site characterization or possible remediation activities at the Rulison Gas Stimulation Test Site.

A literature search pertaining to the project area and pedestrian inventory were conducted on a total of 40 acres located 6 miles southeast of Parachute, Garfield County, Colorado. The primary objective of the inventory was to locate and record any cultural resources in the area of potential remediation impact. The secondary purpose of the investigations was to incorporate the information gathered on any cultural resources identified during the inventory, using the context of the Colorado Resource Protection Planning Process documents.

One historic isolated find (IF) consisting of a cast iron stove was recorded. One historic monument—the Rulison Gas Stimulation Test Site surface ground zero (SGZ)—was recorded. It is recommended that the Rulison Site SGZ monument (5GF1656) be considered eligible for nomination to the National Register of Historic Places along with three other similar sites in Colorado and New Mexico.

It is recommended that the project proceed. However, should any cultural materials be uncovered during construction, a qualified archaeologist should be called in to assess the site and the U.S. Bureau of Land Management (BLM), Glenwood Springs Resource Area archaeologist, and the Office of Archaeology and Historic Preservation should be notified.

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List of Abbreviations and Acronyms

AEC	Atomic Energy Commission
amsl	above mean sea level
BLM	U.S. Bureau of Land Management
C.F.R.	Code of Federal Regulations
cm	centimeters
DOE	U.S. Department of Energy
DOE/NV	DOE Nevada Operations Office
ft	feet
IF	isolated find
IT	IT Corporation
m	meters
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
OAHP	Colorado Office of Archaeology and Historic Preservation
RP3	Resource Protection Planning Process
SGZ	Surface Ground Zero

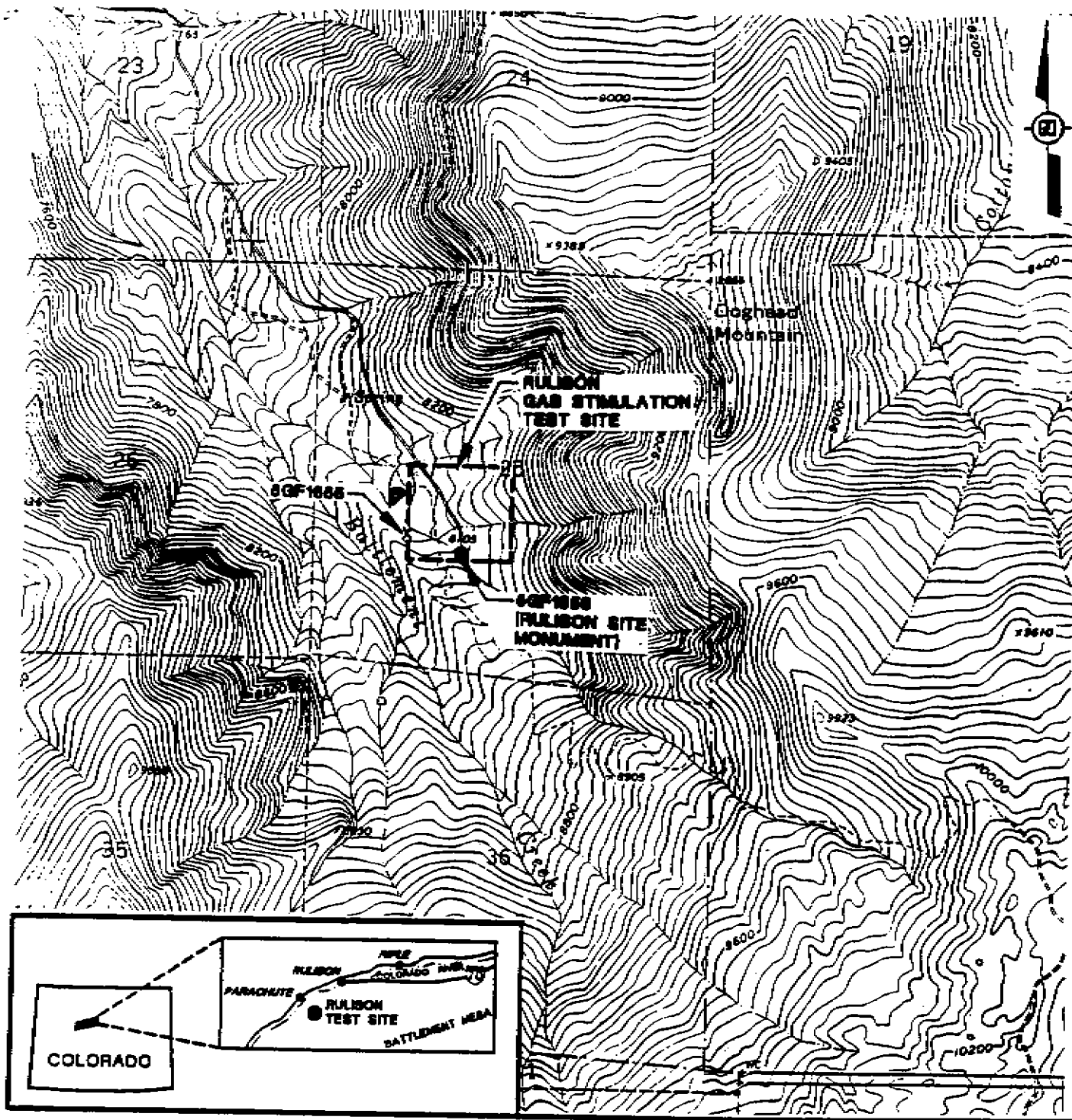
1.0 Introduction

The following report documents the findings of a Class III cultural resources survey conducted by IT Corporation (IT) for the DOE Nevada Operations Office (DOE/NV) as part of compliance with the National Environmental Policy Act (NEPA) (Contract No. DE-AC08-92NV10972). The purpose of the investigations was to comply with federal mandates pertaining to the historic preservation of cultural resources, including Section 106 of the National Historic Preservation Act, as implemented by the Advisory Council on Historic Preservation, Title 36 Code of Federal Regulations (C.F.R.) §800; the Archaeological and Historic Preservation Act, as implemented by the Advisory Council on Historic Preservation, Title 36 C.F.R. §800; Executive Order 11593; and the American Indian Religious Freedom Act. The DOE regulations contained in Title 10 C.F.R. §1021 also require compliance with historic preservation mandates. The project involved both private and federal lands. The federal lands are managed by the U.S. Bureau of Land Management (BLM); therefore, the project was conducted under the auspices of BLM Cultural Use Permit No. C54964 and State of Colorado Archaeological Permit No. 93-48 (expires 2/28/94).

The investigations were conducted in order to evaluate the potential impacts that may occur as a result of performing site characterization or possible remedial activities at the DOE's Rulison Gas Stimulation Test Site in west-central Colorado. A block of 16.2 hectares (40 acres) was inventoried. The land is located approximately 6 miles southeast of the town of Parachute in Garfield County, Township 7 South (T7S), Range 95 West (R95W), Section 25, NE¼, SW¼, 6th Principal Meridian (see Figure 1-1).

The U.S. Department of Energy (DOE) (previously the Atomic Energy Commission [AEC]), as well as other parties, has conducted activities on portions of the 16.2 hectares (40 acres) at the site since the 1960s. Project Rulison involved the underground detonation of a nuclear device in a deep shaft near Battlement Creek in 1969. During the 1960s and 1970s, grading, filling, and other types of ground disturbance were conducted on portions of the 16.2 hectares (40 acres). Presently, the site is used primarily for livestock grazing. Future ground disturbance during remediation could include installation of monitoring wells and removal of soils for environmental restoration purposes.

The primary objective of the investigations was to locate or identify any cultural resources in the area of planned remedial activities and to make recommendations with respect to the



LEGEND

- PROJECT BOUNDARY
- X ISOLATED FIND
- SITE

SCALE
0 2000 4000 FEET

SOURCE: USGS 7.5' RULISON, CO.
TOPOGRAPHIC MAP.

FIGURE 1-1

LOCATION OF RULISON GAS
STIMULATION TEST SITE

significance and eligibility for nomination to the National Register of Historic Places (NRHP) of any resources found. The second objective of the project was to incorporate the information gathered on any existing cultural resources within the project area into the data bank for Garfield County. The basis for incorporation was to be the context of the Resource Protection Planning Process (RP3) documents for west-central Colorado.

A site file search was conducted by the Colorado Office of Archaeology and Historic Preservation (OAHP) on December 22, 1992. The field inventory was conducted on July 1, 1993, by Lucy Hackett Bambrey of IT Corporation and Tom Reust, Sheila Powley, and Bill Harding of Mariah Associates, Inc.

2.0 Environment

The proposed project area is located at the eastern edge of the Colorado Plateau physiographic province. The province is characterized by relatively high elevations and extensive horizontal sedimentary rock formations dissected to form mesas and canyons (Reed 1984). The Rulison Site is located on the north-facing slope of Battlement Mesa, a prominent topographic feature south of the Colorado River Valley. The east fork of Battlement Creek flows through the southwestern portion of the project area and provides a permanent source of water.

West-central Colorado is generally classified as semiarid, with low precipitation and relative humidity, warm summer temperatures, and abundant sunshine (Marlatt 1973). Winds are generally from the west, but fail to carry much moisture from the Pacific Ocean and the Gulf of Mexico past western and southern mountain barriers. Annual precipitation ranges from 10 inches (in.) at elevations of 5,000 feet (ft) above mean sea level (amsl) to 25 in. at 8,000 ft amsl. Winter snowfall may exceed 100 in. on plateau tops (Marlatt 1973). The length of the growing season at Parachute is 150 days (Brooks et al. 1933).

The evaporative demand on the north slope of Battlement Mesa is fairly low compared to that of the area north of the Colorado River (Marlatt 1973). Moisture has a chance to soak into the volcanic soils; thus, the vegetative community is well developed. This community is able to support a variety of faunal species.

The flora in the area consist primarily of species common to alpine forests: mixed mountain shrub and grasses, aspen (*Populus tremuloides*), Douglas fir (*Pseudotsuga menziesii*), mountain mahogany (*Cercocarpus montenus*), and serviceberry (*Amelanchier alnifolia*). The plant species are suitable for grazing of cattle and horses. Mammals common to the area are beavers (*Castor canadensis*), marmots (*Marmota flaviventris*), elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), and bear (*Ursus americanus*).

3.0 Existing Data

An initial literature/file search was conducted at the OAHP, Colorado Historical Society, on December 22, 1992. The Colorado Inventory of Cultural Resources showed one recorded historic site (5GF447) located within Section 25. Additionally, there have been two cultural resources investigations conducted within Section 25. A site file search at the BLM Glenwood Springs Resource Area Office was conducted on June 28, 1993. This search showed that site 5GF447 was not located in Section 25 and that no cultural resources sites have been recorded within the project boundaries. A telephone contact with the BLM Glenwood Springs Resource Area Archaeologist, Patty Walker-Buchanan, on July 14, 1993, verified that Battlement Road, which leads up to the Rulison Test Site, was surveyed as part of the Parachute Exchange Cable Replacement Project in 1991.

The Garfield County Assessor's office in Glenwood Springs, Colorado, was visited in order to determine land ownership records. The County Assessor's office records indicate that the project lands were acquired by Cary Weldon and Melvin Atwood in 1976. Subsurface public access was withdrawn prior to the detonation; the BLM retains jurisdiction over subsurface rights.

The Indian Commission of Colorado and the Ute tribes were consulted to determine whether any sites having religious or cultural importance to Native Americans exist within or near the project boundaries (Appendix A). No such sites are known to exist. Last, contact with a local resident of Battlement Mesa was made to gather any information that amateur archaeologists may have about the project area.

The cultural history of west-central Colorado is assumed to span approximately 10,000 years (Reed 1984). There are five cultural stages currently recognized, as documented in the *West Central Colorado Prehistoric Context* published by the Colorado Historical Society: the

Paleoindian Stage (ca. 10,000 to 5500 B.C.), the Archaic Stage (ca. 5500 B.C. to A.D. 500), the Formative Stage (ca. A.D. 500 to 1200), the Protohistoric/Historic Stage (ca. A.D. 1200 to 1880s), and the historic Euro-American Tradition (A.D. 1770s to present) (Reed 1984). Further information on the cultural history and settlement patterns can be found in Burgess et al. (1980) and Mehls (1982). Currently, no BLM cultural resources overview has been published for the Glenwood Springs Resource Area.

A review of the literature shows that a variety of archaeological site types occurs in west-central Colorado that can be classified into descriptive and/or functional categories (Reed 1984). The most common descriptive site types in the general project area range from open lithic scatters, some with the remains of ground stone and ceramics, to rock shelters, rock art, masonry structures, wickiups, and tree platforms.

Historically, Garfield County was utilized by both Native Americans and Euro-American settlers. A Ute Indian trail is thought to have extended from hunting grounds on top of Battlement Mesa down Battlement Creek, crossing the Colorado River at the present town of Parachute (Hayward 1992). However, there are no known Native American ceremonial or sacred sites within or near the project boundaries (personal communication, Indian Commission of Colorado, 1993).

Permanent white settlement began in the 1880s with the establishment of several ranching towns and the Rio Grande Junction Railway (Mehls 1982). Volcanic soils on Battlement Mesa were suitable for farming (Mehls 1982). Most of the recorded historic sites near the project area relate to the homesteading, ranching, and livestock grazing themes. Oil and gas lease fields are in existence nearby. Generally, resources that are 50 years or older are considered to be of potential archaeological or historical significance.

Livestock ranching, agriculture, retirement homes, oil and gas development, and tourism comprise the present day economic resources of the area. The project land is currently being used for a summer residence, as evidenced by a mobile home structure approximately 90 meters east of the Rulison Test Site surface ground zero (SGZ).

4.0 Project Objectives

The following is a summation of the statement of objectives submitted to the OAHP prior to field work:

The simplicity of this project, based on the acreage (40 acres) and the anticipated low site density, did not seem to merit an extensive set of hypotheses and data requirements. Instead, the intent of the project was to complement or fill any appropriate data gaps listed in the RP3 documents (Reed 1984; Husband 1984; Buckles and Buckles 1984). For instance, if a site with diagnostic Archaic materials was recorded, an attempt would be made to apply the research problems and needed research topics listed in Reed (1984:27-30) to the site. The project objectives and methodology are described in the following paragraphs.

The primary purpose of the investigations was to locate or identify any cultural resources in the area of planned monitoring and remediation impact. (Past inventories have tended to avoid certain geographical areas, such as major valley bottoms, because of land ownership and location of resource development.) Once a site was located, recorded, and evaluated, recommendations for avoiding or lessening potential adverse effects of remedial activities would be made. Preservation of significant cultural resources by avoidance, or mitigation strategies for those properties where avoidance is not feasible, would be among the preferred options for management recommendations.

The secondary purpose of the proposed investigations was to incorporate the information gathered on any existing cultural resources within the project area, using the context of the RP3 documents. The types of information to be collected for archaeological sites were site size, the types and density of artifacts found, the types and density of any features, the cultural/temporal affiliation of artifacts or components, the physical setting, and the estimated depth of cultural deposits based on the soil type. All prehistoric sites or isolated finds were to be defined using the guidelines for isolated find, site, locality, and site typology listed in Reed (1984:6-7). The information collected for historic sites was within the framework of the *Colorado Plateau Country Historic Context* (Husband 1984). Site type, existing architecture, chronology/ethnicity, land ownership and use, and historic significance were the main information gathered about any properties identified or located.

For the purposes of the field survey, any cultural material judged to be 50 years of age or older was recorded. A prehistoric site was defined as any locus of activity represented by two or more lithic flakes or tools, two or more ground stone artifacts, or any feature (e.g., hearth or stone circle). Historic sites were considered concentrations of refuse or refuse in combination with structural remains. Single items, such as a stone flake or tool or glass fragments from a single glass bottle, were recorded as isolated finds.

A limited number of cultural resources were expected to exist within the project boundaries. There were two reasons for this expectation. First, there have been no sites recorded within a one-mile radius of the project boundaries. Second, the environmental variables are not favorable for a high site density. Much of the project lands are on the narrow valley floor formed by the east fork of Battlement Creek, which transects the project area, or on heavily vegetated slopes above the creek. There is a greater potential for prehistoric open campsites to be located on top of the mesa or near springs along the valley floor.

It was expected that any cultural resources located would be either prehistoric open lithic campsites or isolated finds or historic ranching activity debris. This assumption was based on the types of sites reviewed in the initial literature search and the most common site types for the area as listed in Reed (1984) and Husband (1984).

5.0 Methodology

The field survey was accomplished by a four-person crew. The crew members spaced themselves at intervals of no greater than 20 meters and moved across the project area in a north-south direction. At the project boundary, the crew reversed direction. Distance between surveyors was measured by pacing, and direction was maintained by the use of compasses. When a culturally modified object (e.g., lithics or ceramics) was located, the crew members marked their current locations and proceeded to the find locus to search for additional cultural materials.

The survey was a visual evaluation only. No collection of artifacts was conducted. Artifacts that are on the ground surface were recorded, sketched and/or photographed, and returned to the surface. No artifacts were extracted from the subsurface soil (see explanation and rationale in Section 6.0, Special Considerations). No subsurface shovel test pits were excavated (see explanation and rationale in Section 6.0, Special Considerations).

The site forms currently being used by the OAHF were used for recording sites. The site form was to be supplemented with a scale map of the site, if necessary. Upon determination that a find locus met the criterion for a site, it was assigned a temporary field number, and the crew proceeded to locate and flag all cultural material.

All sites and isolated finds were plotted on the Rulison USGS 7.5' topographic maps and on appropriate project area maps. Mapping was supplemented with photographs. At least two black and white 35-mm photographs were taken of each site. Photographic records were kept to facilitate later identification of subjects.

A total of 16.2 hectares (40 contiguous acres) was surveyed. The vegetation cover at the time of the survey ranged from 25 to 100 percent.

6.0 Special Considerations

Because of the nature of the DOE operations that have been conducted in the past or are currently being conducted at the site, certain items of special consideration were brought to the attention of the OAHF and the BLM.

Past activities at the site have involved the use of radioactive materials and hazardous chemicals. There is currently no evidence that surface activities pose a threat to human health or field investigators. However, until it can be verified through site investigations that subsurface activities pose no threat to personnel, Occupational Safety and Health Act regulations in Title 29 C.F.R. §1910.120 were followed. This meant that no disturbance of the ground surface was conducted. No artifacts were collected from the surface; no artifacts were extracted from the soil; no subsurface test pits were excavated.

It was anticipated that enough data could be collected from surface examinations only to enable the DOE to make initial recommendations for the significance and/or potential eligibility of the sites for inclusion in the NRHP under § 106 of the National Historic Preservation Act. Consequently, surface cultural manifestations were recorded with as much detail as possible.

7.0 Results of Field Work

The number and density of prehistoric cultural material located during the field survey was as expected. No prehistoric isolated finds or sites were recorded. The types of historic items observed were consistent with the expected results. Site forms are attached as Appendix B.

7.1 Isolated Find 5GF1655 (IF1)

Isolated find 5GF1655 consists of a cast-iron rectangular box stove. The stove is decorated with raised circular and scroll patterns. The legs, the front door, and one of the top lids is missing. No manufacturer's name or date was observed. The stove could be of the type manufactured during the first half of this century. Carvings of Anglo names in nearby aspen trees date to the 1950s, but it is unknown whether the stove is associated with that time period. The stove is a common type and is not considered to be significant or eligible for inclusion in the NRHP.

7.2 Cultural Resources Site 5GF1656 (ITC-1)

Site 5GF1656 is the Rulison Gas Stimulation Test Site SGZ monument. The Rulison Site was part of the AEC's experimental Plowshare Program, which sought to develop peaceful uses of nuclear devices in the 1960s and 1970s.

The site consists of a concrete slab measuring approximately 3 meters (m) north-south by 5 m east-west. Atop the concrete slab is a concrete pedestal measuring roughly 40 centimeters (cm) (16 in.) long by 30 cm (12 in.) deep by 20 cm (8 in.) high. A bronze plaque is set into the pedestal (see Figures 7-1 and 7-2). The title of the monument reads:

"Project Rulison Nuclear Explosive Emplacement Well (R-E)"

The monument describes the Rulison Site as the site of the second nuclear gas stimulation experiment in the U.S., where one 43-kiloton nuclear explosive was detonated in a well 8,426 ft below the surface, on September 10, 1969. The monument is surrounded by a graded area measuring anywhere between 30 to 60 m in radius.

There is evidence that the monument has been vandalized. The concrete pedestal has been severely chipped in its north and east edges. The bronze plaque has been scratched and dented. In addition, two small metal plaques have been affixed or glued to the back (east)



FIGURE 7-1

VIEW OF RULISON GAS STIMULATION TEST SITE SURFACE GROUND ZERO

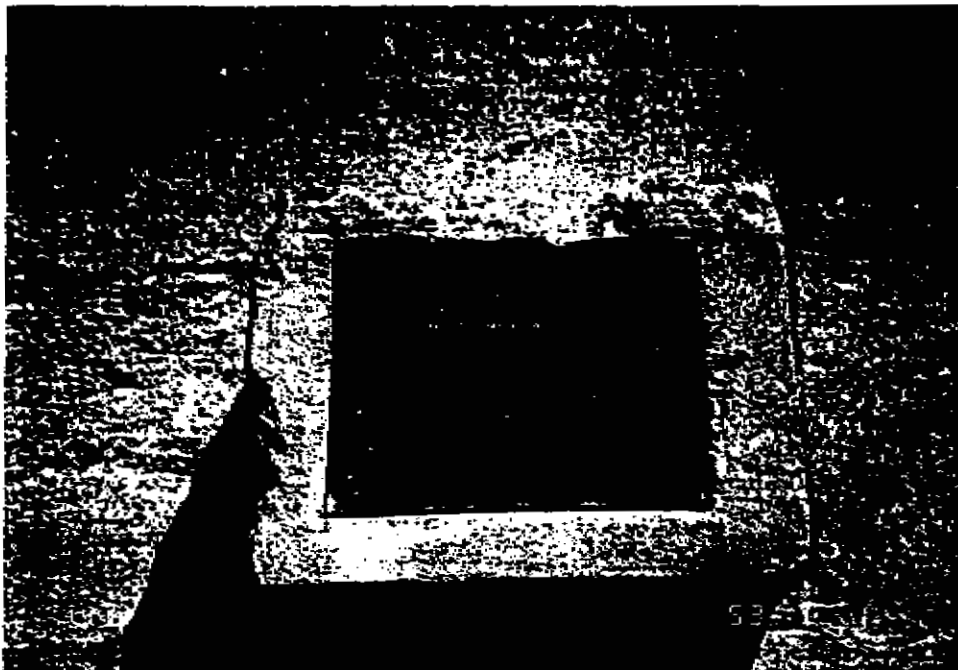


FIGURE 7-2

CLOSE-UP VIEW OF RULISON GAS STIMULATION TEST SITE SURFACE GROUND ZERO

side of the pedestal. One small weathered plaque remains in place. The text on this plaque enumerates the radioactive isotopes utilized and created by the nuclear device and lists the hazards to human health and the environment. DOE officials who visited the site in June 1993 had no knowledge of the DOE affixing these types of plaques to the monument. (Similar plaques appear on other Plowshare Program monuments in Colorado and New Mexico.)

Under the Plowshare Program, the economic feasibility of stimulating the flow of natural gas by fracturing rock formations with underground nuclear explosions was explored. A series of joint government-industry experiments were conducted in New Mexico and Colorado:

- Project GNOME (prototype), near Carlsbad, New Mexico; detonated December 10, 1961
- Project GASBUGGY, near Dulce, New Mexico; detonated December 10, 1967
- Project RULISON, near Rulison, Colorado; detonated September 10, 1969
- Project RIO BLANCO, near Rio Blanco, Colorado; detonated May 17, 1973.

The program was successful in that the blasts stimulated the flow of natural gas. However, radioactivity remaining in the gas precluded its use in the industrial market.

The use of nuclear devices for peaceful purposes is an important aspect to the Cold War Era of nuclear proliferation. The Plowshare Program is an integral part of the recent history of the United States and the globe, in that the development of nuclear power has swiftly altered the course of human history within the past half century. While the Plowshare Program sites are less than 50 years of age, the thematic importance of the Rulison Test Site should be considered exceptional and significant.

It is recommended that the site 5GF1656 be considered significant and potentially eligible for nomination for inclusion in the NRHP. It is suggested that the site be nominated to the NRHP along with the other three Plowshare Program sites as a group within the thematic context of events of exceptional importance that have contributed to the broad patterns of human history.

8.0 Conclusions and Recommendations

Based on the Class III cultural resources survey, it is recommended that clearance be given for future monitoring and restoration activities. The cast iron stove (IF) 5GF1655 does not merit further consideration. Site 5GF1656, the Rulison Gas Stimulation Test Site SGZ monument, is considered to be potentially eligible for the NRHP. It is recommended that the Rulison Gas Stimulation Test Site be nominated to the NRHP along with the other three Plowshare Program sites in Colorado and New Mexico. While it is highly unlikely that the SGZ shaft and monument will be disturbed during remediation and restoration, avoidance of the monument and institution of a buffer zone of a 100-foot (30-m) radius is recommended.

Should any prehistoric or historic artifacts or remains be uncovered during remediation activities, work should cease, and a qualified archaeologist should be called in to assess the items. The BLM Glenwood Springs Resource Area archaeologist and the OAHP should be contacted.

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Appendix A

Correspondence with Indian Commission of Colorado and Ute Tribes



Department of Energy

Nevada Operations Office

P.O. Box 98518

Las Vegas, NV 89193-8518

Leonard Burch, Tribal Chairman
Southern Ute Tribe
P.O. Box 737
Ignacio, Colorado 81137

REQUEST FOR COMMENTS ON CULTURAL RESOURCES PROJECT

The U.S. Department of Energy (DOE) continues to monitor the two Project Plowshare sites in Colorado. In the future, DOE will be conducting characterization studies to determine what remediation, if any, may be required at these sites. In June and July 1993, in preparation for these activities which may involve drilling, geophysical surveys, and the collection of environmental samples, DOE commissioned cultural resources surveys on 360 acres at the Rio Blanco Gas Stimulation Test Site, Rio Blanco County, Colorado, and on 40 acres at the Rulison Gas Stimulation Test Site, Garfield County, Colorado, near the homelands of the Southern Ute Tribe. The areas are located on U.S. Bureau of Land Management (BLM) and private lands. The Rio Blanco site is located at T.3S., R.98W., SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 10, S $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11, NW $\frac{1}{4}$ Sec. 14, E $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 15 (Rock School quad map). The Rulison site is located at T.7S., R.95W., NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 25.

The surveys were conducted by IT Corporation and Mariah Associates, Inc. (under BLM permits numbered C54964 and C44151). Previous surveys had identified no prehistoric sites at Rio Blanco, and no new sites were located within the 360 acre project area. Two isolated occurrences (IOs) were found and consisted of a bifacial knife and a chert flake. The Rio Blanco site was previously recorded as an historic site. Preliminary recommendations are that no further investigations are required at the two IOs and that the gas stimulation site itself be formally evaluated for nomination to the National Register of Historic Places (NRHP).

Surveys at the Rulison site located no prehistoric sites. Two historic sites were found consisting of a stove box and the previously recorded event site. Preliminary recommendations are that the stove box merits no further consideration and the Rulison site be nominated to the NRHP. No materials were removed from either survey site.

DOE requests the comments of the Southern Utes regarding the significance to the people of the project areas surveyed. If there are any potential sites of historic, religious, or ceremonial significance that might be adversely affected by future alteration of the present ground surface, please contact me by November 29, 1993, so that this information can be included in our report.

Leonard Burch

-2-


If you have any questions, please contact Frank R. Maxwell, of my staff, at (702) 295-1050.
Thank you for your consideration of this request.

ERD:FRM


Stephen A. Mellington, Acting Director
Environmental Restoration Division

cc:

Indian Commission of Colorado
Michael Selle, BLM, Meeker, CO
Patty Walker-Buchanan, BLM,
Glenwood Springs, CO
L. H. Bambrey, IT, Denver, CO
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Fort Duschene, Utah 84026

REQUEST FOR COMMENTS ON CULTURAL RESOURCES PROJECT

The U.S. Department of Energy (DOE) continues to monitor the two Project Plowshare sites in Colorado. In the future, DOE will be conducting characterization studies to determine what remediation, if any, may be required at these sites. In June and July 1993, in preparation for these activities which may involve drilling, geophysical surveys, and the collection of environmental samples, DOE commissioned cultural resources surveys on 360 acres at the Rio Blanco Gas Stimulation Test Site, Rio Blanco County, Colorado, and on 40 acres at the Rulison Gas Stimulation Test Site, Garfield County, Colorado, near the homelands of the Northern Ute Tribe. The areas are located on U.S. Bureau of Land Management (BLM) and private lands. The Rio Blanco site is located at T.3S., R.98W., SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 10, S $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11, NW $\frac{1}{4}$ Sec. 14, E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 15 (Rock School quad map). The Rulison site is located at T.7S., R.95W., NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 25.

The surveys were conducted by IT Corporation and Mariah Associates, Inc. (under BLM permits numbered C54964 and C44151). Previous surveys had identified no prehistoric sites at Rio Blanco, and no new sites were located within the 360 acre project area. Two isolated occurrences (IOs) were found and consisted of a bifacial knife and a chert flake. The Rio Blanco site was previously recorded as an historic site. Preliminary recommendations are that no further investigations are required at the two IOs and that the gas stimulation site itself be formally evaluated for nomination to the National Register of Historic Places (NRHP).

Surveys at the Rulison site located no prehistoric sites. Two historic sites were found consisting of a stove box and the previously recorded event site. Preliminary recommendations are that the stove box merits no further consideration and the Rulison site be nominated to the NRHP. No materials were removed from either survey site.

DOE requests the comments of the Northern Utes regarding the significance to the people of the project areas surveyed. If there are any potential sites of historic, religious, or ceremonial significance that might be adversely affected by future alteration of the present ground surface, please contact me by November 29, 1993, so that this information can be included in our report.

Clifford Duncan

-2-

If you have any questions, please contact Frank R. Maxwell, of my staff, at (702) 295-1050.
Thank you for your consideration of this request.

ERD:FRM


Stephen A. Mellington, Acting Director
Environmental Restoration Division

cc:

Indian Commission of Colorado
Michael Selle, BLM, Meeker, CO
Patty Walker-Buchanan, BLM,
Glenwood Springs, CO
L. H. Bambrey, IT, Denver, CO
M. L. Brown, IT, Las Vegas, NV



Department of Energy

Nevada Operations Office

P.O. Box 98518

Las Vegas, NV 89193-8518

Judy Knight-Frank, Tribal Chairperson
Ute Mountain Ute Tribe
Towaoc, Colorado 81334

REQUEST FOR COMMENTS ON CULTURAL RESOURCES PROJECT

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Judy Knight-Frank

-2-

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Stephen A. Mellington, Acting Director
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cc:

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Patty Walker-Buchanan, BLM,
Glenwood Springs, CO
L. H. Bambrey, IT, Denver, CO
M. L. Brown, IT, Las Vegas, NV

Appendix B

**Colorado Office of Archaeology
and Historic Preservation Site Forms**

COLORADO CULTURAL RESOURCE MANAGEMENT

ISOLATED FIND RECORD

1)Resource No.: SGE1655 2)Temp.No.: IF1 3)County Garfield

I. LOCATION

4)Legal Location NW 1/4, SW 1/4, NE 1/4, SW 1/4, Sec. 25 T 7S R 95W PM 6th

5)USGS Quad: Name Rulison Size 7.5 Date 1960 (rev. 1987)

6)UTM:Zone 13, 2 4 6 0 0 0 mE, 4 3 6 5 8 0 mN. Attach copy of
portion of USGS Quad.

II. ARCHAEOLOGICAL DATA:

7.Artifacts:

Rectangular box-style cast iron stove; raised scroll and circular patterns; no
trademark visible; end door, legs, and one of two lids are missing.

8)Inferred function/description:
heating,

9)Cultural Affiliation Euroamerican Time Period 1900-1950

10)IF Dimensions X

III. ENVIRONMENTAL DATA:

11)Elevation 8040 ft. 2451 m. 12)Soil light brown sand/gravel

13)Topography valley 14)Slope: Site 4° Surrounding 10-20°
east fork of

15)Nearest water: name/nature Battlement Creek elev. 8040 dist. 20m direction east

Nearest permanent water same elev. dist. direction

16)Vegetation on site mountain shrubs/grasses Surrounding veg. aspen, fir, pine

Additional Comments:

IV. ADDITIONAL INFORMATION: (narrative, drawings, sketch map)

see photo

V. REFERENCE DATA:

18)Collection: yes no X describe

19)Repository: 20)Landowner Cary Weldon/Melvin Atwood

21)Report Title Cultural Resources Survey of the
U.S. DOE Rulison Gas Stimulation 22)Recorder L. H. Bambrey

23)Affiliation Test Site, Garfield County, CO 24)Date 7/1/93
II Corporation, Englewood, CO

Colorado Cultural Resource Survey
Management Data Form
(page 1 of 5)

Complete this form for each resource in addition to other
appropriate forms—see Manual for information

1. State Site Number: SGF1656 2. Temporary Site Number: ITC-1
3. Attachments (check as many as apply)
- | | |
|---|---|
| <input type="checkbox"/> Prehistoric Archaeological Component | <input type="checkbox"/> Determined Eligible |
| <input checked="" type="checkbox"/> Historical Archaeological Component | <input type="checkbox"/> Determined Not Eligible |
| <input type="checkbox"/> Historical Architectural Record/
Building Form | <input type="checkbox"/> Nominated |
| <input type="checkbox"/> Sketch/Instrument Map (required) | <input type="checkbox"/> Listed |
| <input checked="" type="checkbox"/> U.S.G.S. Map Photocopy (required) | <input type="checkbox"/> Need Data |
| <input checked="" type="checkbox"/> Photograph(s) | <input type="checkbox"/> Contributing to NR Dist. |
| <input checked="" type="checkbox"/> Other, specify: <u>Vandalism Record</u> | <input type="checkbox"/> Not Contributing to NR Dist. |

I. IDENTIFICATION

5. Resource Name: Project Rulison Nuclear Explosive Emplacement Well (R-E)
6. Project Name/Number: Cultural Resources Survey of the Rulison Gas Stimulation Test Site
7. Government Involvement: Local ☐ State ☐ Federal ☒ # 301935
Agency: BLM - Glenwood Springs Resource Area (subsurface)
8. Site Categories: Check as many as apply
- Prehistoric: archaeological site ☐ paleontological site ☐
in an existing National Register District? yes ☐ no ☐ name ☐
- Historic: archaeology site ☒ building(s) ☐ structure(s) ☒ object(s) ☐
in an existing National Register District? yes ☐ no ☒ name ☐
9. Owner/Owner's Address: Cary Weldon/Melvin Atwood, Garfield County (surface)
10. Boundary Description and Justification: Poured concrete slab measuring ca. 3m x 5m
covers well shaft; concrete monument is on top of slab.
11. Site Dimensions: 3 N-S m 5 E-W m Area: 15 m² (+4047) .004 acres
Area was calculated as: Length x Width ☒ OR (length X width) X .785
rectangle/square ellipse

II. LOCATION

12. Legal Location

PM 6th Township 7S Range 95W SW1/4ofSE 1/4ofNE 1/4ofSW 1/4 Section 25
PM Township Range 1/4of 1/4of 1/4of 1/4 Section
PM Township Range 1/4of 1/4of 1/4of 1/4 Section
PM Township Range 1/4of 1/4of 1/4of 1/4 Section
if section is irregular, explain alignment method:

13. USGS Quad: Rulison 7.5' X 15' Date(s): 1960 (rev 1987) (attach photocopy)

State Site # SGF1656
Temporary # ITC-1

Management Data Form
(page 2 of 5)

16. UTM Reference:

A. 1 3; 2 4 6 2 0 0mE 4 3 6 5 7 0 0mN

B. _____ mE _____ mN

C. _____ mE _____ mN

D. _____ mE _____ mN

17. Address: NE 1/4, SW 1/4 Lot 11 Block Addition

18. Location/Access: From town of Parachute, travel south on Battlement Pkwy. for 2.5 miles
turn left on paved road; travel .6 mile; turn left on Underwood Lane; travel 2.6
miles to Battlement Road; turn right; travel 1.7 miles; go straight through gate; travel
.2 mile to monument.

III. NATURAL ENVIRONMENT

19. Topographic Feature(s)

X mountain

hill

 ridge

saddle/pass

alcove/rockshelter

cliff

X slope

 ledge

_____ terrace/bench

CANYON

x valley

basin

 floodplain

cutbank

 arroyo/gully

 plays

 talus slope

 alluvial fan

 plain

 china

20. Describe on-site topography (mention named landforms): Site is located in the valley created by Battlement Creek on the north-facing slope of Battlement Mesa, approximately 3 miles below the top of the mesa.

21. Site Elevation: 8105 feet $-(\times .3048)$ 2470 meters 22. Aspect: 300° (NW)

23. Degree of slope on site: 2°-4° 24. Soil Depth: unknown cm

25. Soil description (character and color): light brown/gray gravel

26. Depositional environment:

aeolian

_____ residual

X colluvial

X alluvial

none

_____ moraine.

other, specify:

27. Nearest water: name/nature: east fork of Battlement Creek - permanent

distance: 50 **m** 165 **ft.**

28. Nearest permanent water: name: same distance: m ft.

29. Vegetation on site (list predominant species): mountain grasses

30. Vegetation associations/communities surrounding site: aspen, Douglas fir, Englemann

State Site # SGF1656
Temporary # ITC-1

Management Data Form
(page 3 of 5)

IV. National Register Eligibility Assessment

31. Colorado Historical Society context (RP3) theme(s): Federal Activity

Specify: Post-1950/Cold War Era/Engineering Context - Natural Gas/Nuclear Power

32. Applicable National Register Criteria:

☐ Does not meet any of the below National Register criteria

☒ A. associated with events that have made a significant contribution to the broad pattern of our history

☐ B. associated with the lives of persons significant in our past

☐ C. embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction

☐ D. has yielded, or may be likely to yield, information important in history or prehistory

☐ Qualifies under exceptions A through G (see Manual)

Level of Significance: National y State y Local y

33. Condition

a. Architectural/Structural

☐ Excellent

☐ Good

☒ Fair

☐ Deteriorated

☐ Ruins

b. Archaeological/Paleontological

☐ Undisturbed

☐ Light disturbance

☐ Moderate disturbance

☐ Heavy disturbance

☐ Total disturbance

34. Describe condition: Concrete pedestal and plaque have been chipped, scratched, and dented.

35. Is site vandalized? yes ☒ no ☐ describe: Concrete around bronze plaque is chipped; metal plaque(s) on back of concrete monument has been added with adhesive.

36. Eligibility Recommendation:

Eligible ☒ Not Eligible ☐ Need Data ☐

Statement of Significance/N.R.H.P. Justification: Site is one of four sites in Colorado and New Mexico in the Plowshare Program, a program to develop peaceful use of nuclear devices. The sites should be considered eligible for NRHP in thematic context of events of exceptional importance that have contributed to the broad patterns of human history.

37. If in an existing National Register District, is the site Contributing ☐ Non-Contributing ☐

38. Is there National Register District Potential? yes ☐ no ☒ discuss: The Plowshare Program sites are not contiguous.

State Site # 5GE1656
Temporary # ITC -1

Management Data Form
(page 4 of 5)

MANAGEMENT AND ADMINISTRATIVE DATA

39. Threats to Resource: water erosion__ wind erosion__ animal activity__ neglect X
vandalism X recreation__ construction__ other (specify): _____
comments: _____
40. Existing Protection: none__ marked__ fenced X patrolled__ access controlled__
other (specify): within confines of private property
41. Local landmark designation: _____ 42. Easement: _____
43. Management Recommendations: Continue to fence as private property.

VI. DOCUMENTATION

44. Previous Actions Accomplished at the site:
a. Excavations: test__ partial__ complete__ Date(s): _____
b. Stabilization: Date(s): _____
c. HABS/HAER Documentation: Date(s) & Numbers: _____
d. Other _____
45. Known collections/reports/interviews and other references (list): _____
46. Primary Location of Additional Data: _____
47. State or Federal Permit Number: BLM Permit C54964
CO 93-48 Collection Authorized: yes X no__
Artifact Collection: yes__ no X
Method: Diagnostics__ grab sample__ random sample__ transect__
Other (specify): _____
Artifact Repository _____
48. Photograph Nos.: Roll 2, Nos. 8-9 negatives filed at IT Corporation
Englewood, CO
49. Report Title: Cultural Resources Survey of the U.S. DOE Rulison Gas Stimulation Test
Site, Garfield County, Colorado
50. Recorder(s): L. H. Bambrey Date(s): 7/1/93
51. Affiliation: IT Corporation, Englewood, CO Phone Number: (303) 793-5200

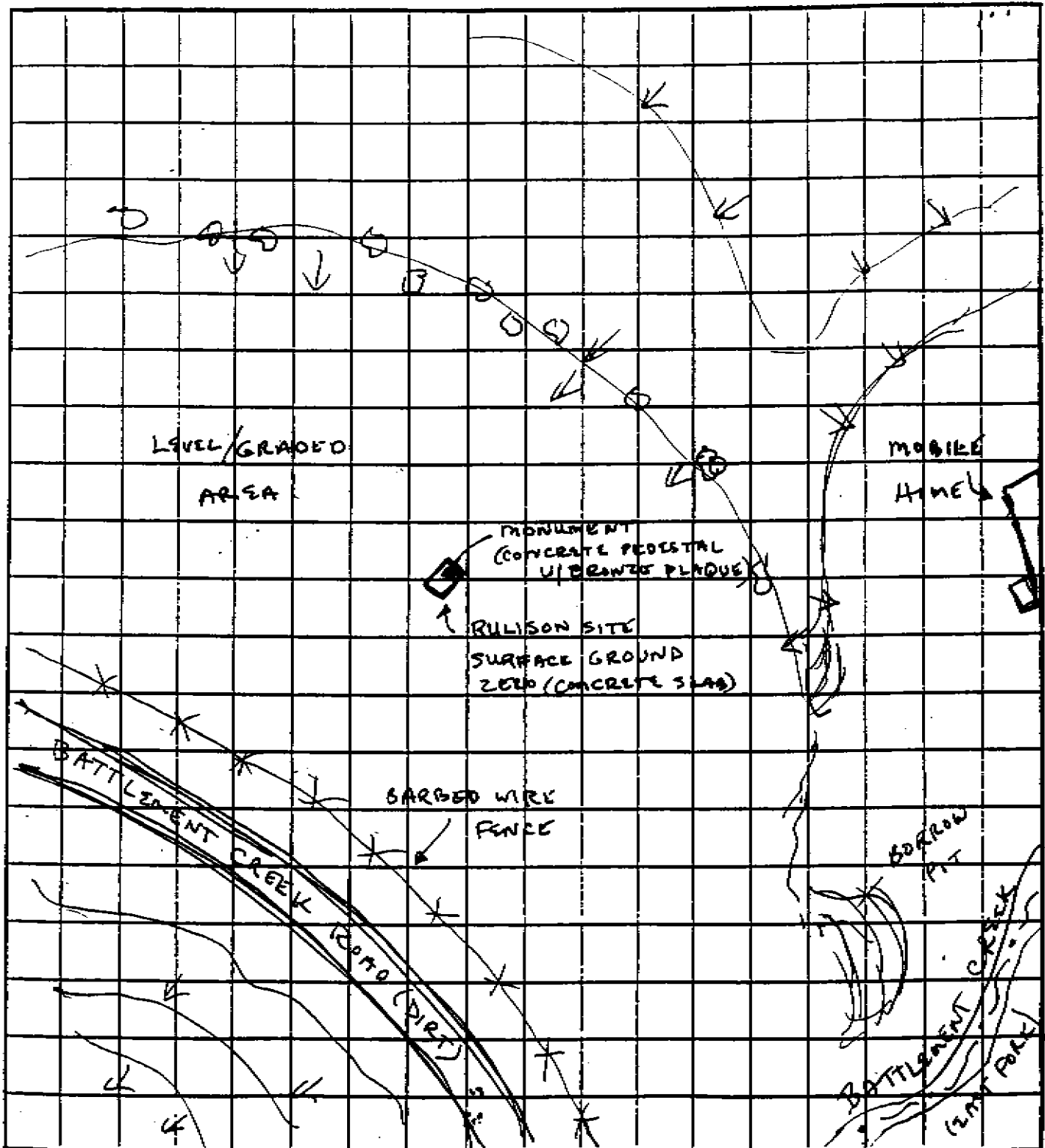
Management Data Form
Site Sketch Map
(page 5 of 5)

Key

- ☐ - CONCRETE SLAB / MONUMENT
- - TREE
- XX - FENCE
- ~ ~ - CREEK

True _____ Mag. X
declination 12.5°

Scale 1 cm = 10m (approx.)
0 1 2 3 4 5 m



Colorado Cultural Resource Survey
Historical Archaeology Component Form

(page 1 of 4)

Use this form in conjunction with the Management Data Form. This form should be completed for each historical site with archaeological potential.

1. State Site Number 5GF1656 2. Temporary Number ITC -1

Does this form pertain to the site in general? yes X no OR
a particular feature/structure (please note feature/structure number)

3. Site/Feature Type: Concrete monument with plaque

4. General Site/Feature Description The site consists of a poured concrete slab measuring ca. 3 m N-S by 5 m E-W. Atop the concrete slab is a concrete pedestal measuring roughly 40 cm long by 30 cm wide by 20 cm high. A bronze plaque is set in the pedestal. The title of the monument reads: "project Rulison Nuclear Explosive Emplacement Well (R-E)." The monument describes the site of the second nuclear gas stimulation experiment detonation, September 10, 1969. The monument is surrounded by a graded area measuring anywhere between 30 to 60 m in radius.

5. Historic Component date(s) and/or sociopolitical period 1960s - Cold War Era/
Plowshare Program (development of peaceful uses of nuclear devices)

justification Date on Monument plaque.

6. Component Function(s)

Original Use Well shaft for emplacement of nuclear device.

Present Use backfilled, capped, abandoned, monitored

Comments

7. Ethnic affiliation of occupants Euroamerican

justification Information on monument.

State Site # 5CF1656 Historical Archaeology Component Form
Temporary # ITC-1 (page 2 of 4)

8. Artifact Classes: Please list specific attributes in the first blank and artifact quantity (either count or estimate) on the second line. Particularly important attributes are listed following the artifact class.

<u>Description</u>	<u>Quantity</u>
A. Glass (function, color, manufacturing technique, makers marks, inscriptions, thickness, shape)	
bottle	
window	
other	
B. Ceramics (function, surface treatment/glaze, shape, trademarks, color, decorations, earthenware)	
stoneware	
porcelain	
other	
C. Nails (size, material type and manufacture techniques if not wire or cut)	
cut nails	
wire nails	
other	

State Site # 5GF1656
Temporary # ITC-1

Historical Archaeology Component Form
(page 3 of 4)

Description

Quantity

D. Cans (function, size, material type, type of opening, seams, inscriptions, hole-in-top/hole-in-cap)

sanitary

other:

E. Cartridge Cases (size, inscriptions, material type)

F. Construction Material - logs, milled lumber, brick, adobe, cement/concrete, stone/rock, corrugated metal, asphalt/tar, pipe, etc.

Poured concrete slab; bronze (?) metal plaque on poured concrete pedestal. 1 each

G. Misc. Other Items - utensils, stove parts, wire, nuts, bolts, rivets, screws, buckets, barrels, animals shoes, wagon or car parts, machinery, leather, fabric, clothing, bone, furniture, buttons, coins, etc.

State Site # 5GF1656 Historical Archaeology Component Form
Temporary # ITC-1 (page 4 of 4)

9. Artifact Density: Heavy Medium Light Describe

10. Additional information

Site is one of four sites associated with the Plowshare Program of the
1960s and 1970s. Other sites include: Rio Blanco Site, Colorado, and
Gasbuggy and Gnome-Coach Sites in New Mexico.

Please complete parts 9 and 10 only if this form pertains to the site in general.

11. Architectural Features (complete "Historic Architecture Record/Building Form"
when appropriate)

Map Ref.	Description	Construction Material	Dimensions
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

12. Non-architectural Features

Map Ref.	Description	Construction Material	Dimensions
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

13. Recorder(s) L. H. Bambrey
IT Corporation, Englewood, CO Date 7/1/93

COLORADO CULTURAL RESOURCE MANAGEMENT

VANDALISM RECORD

USE AS A SUPPLEMENT TO (AND NOT IN LIEU OF) COLORADO SITE FORMS; USE TO RECORD VANDALISM TO PREHISTORIC OR HISTORIC CULTURAL SITES

1. Resource No. 5GF1656 2. Owner Cary Weldon/Melvin Atwood (surface)

3. Type of Vandalism (check one or more categories):

☐ Surface collected ☒ Damage to standing structures
☐ Damage to archaeological deposits ☐ Damage to rock art, inscriptions
☐ Other (explain) _____

4. Description (key separate locations to sketch map):

Site consists of concrete slab measuring ca. 3m N-S by 5m E-W. Atop the
concrete slab is concrete pedestal measuring roughly 40 cm by 30 cm by 20 cm
high. Title of monument reads: "Project Rulison Nuclear Explosive
Emplacement Well (R-E)". Concrete pedestal has been severely chipped on
north and east edges. Bronze title plaque has been scratched and dented.
Two small metal plates (one remaining) have been affixed to the back (east)
side of pedestal. These plaques were not part of the original monument;
they list the types of radioactivity and hazards created by the project.

5. Are human remains disturbed? No; describe evidence _____

6. Is this a one-time Unknown or series Unknown of incidents? Estimated time since incident (for multiple incidents, check more than one category):

☐ less than one month; ☐ one month to one year; ☒ several years;
☐ 4-10 years; ☐ 10-20 years; ☐ greater than 20 years.

7. Amount of damage (volume of deposits or area of rock art).

2% Estimate percent of structures, rock art or archaeological deposits destroyed of those originally present

8. Attach closeup photo of each vandalism location within site, key to map.

9. Attach sketch map (show locations of vandalism in relation to site area and features, indicate photo locations).

Recorder(s) L. H. Bambrey

Affiliation IT Corporation, Englewood, CO

Date 7/1/93

Colorado Historical Society, Office of Archaeology & Historic Preservation, 1300 Broadway, Denver, CO 80203 (303/866-3395).